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XXXIX. *Extract of Two Letters from Dr. Alston, Bot. Prof. at Edinburgh, to Dr. Mortimer, Secr. R. S. The first dated 17 March, 1749; the second, August 9, 1750.*

Read Oct. 24,
1751.

A PROPERTY of quick-lime, which I believe was not observed before. In June 1743, for some experiments in vegetation, I infused about 2 pounds of quick-lime in 24 pounds of water, resolving to change the lime, so soon as it did not communicate its virtues to the water. I soon made use of the first lime-water, and filled the vessel with fresh water. When that was exhausted, I fill'd it up a third time; and so on for twenty or thirty times: for I had no reason to change the lime for three years; so long it was good lime-water, gather'd crusts on its surface, turned syrup of violets green, vegetable infusions yellow, tasted as at the first. But at the end of the third, it gather'd no more crusts, was no more lime-water.

The quick-lime, which I kept dry, fell soon into a powder; it stood cover'd these three years (the vessel with the lime-water in it was an inverted large bell-glass, never cover'd) in the green-house. This powder I infused in water, but it communicated no virtue to it whatever. This perhaps you will difficultly believe, but it is easy to make the experiment. The *calx vive*, that I used, was made of the common lime-stone. It is also a common observation of our farmers, that the effect of lime on lands lasts only 3 years.

Second Letter, August 9, 1750.

THE paradox, which I formerly mention'd, concerning *calx vive*, which no body would at first believe, I have demonstrated by repeated experiments, by which it appears, that the stone *calx vive* may afford more than six hundred times its own weight of good lime-water ; for from half a drachm of quick-lime I had forty ounces of lime-water ; from one pound of quick-lime 500 pounds of lime-water ; and the lime is not yet exhausted, the water being as good now as at first, by every experiment that I know. I poured some of it cold (very lately) on some small *calculi*, in a drinking-glass, and in one night's time such phænomena appeared, as notably explained, as well as confirmed, the use of lime-water in the stone. I found also, that quick-lime kept dry, in the open air, 14 months, communicated nothing to water, tho' long infused in it : that lime-water, boiled down to a fourth part, is not weaken'd, neither sensibly stronger ; yet yields a very little of small slender prismatic crystals. I am, Sir,

Your obliged most humble servant,

Charles Alston.